

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of recording information to an optical recording medium to which information is recorded by projecting a pulse-modulated laser beam onto the optical recording medium and forming on the optical recording medium a plurality of recording marks selected from a group consisting of several types of recording marks each with different lengths, wherein: the method of recording information to an optical recording medium comprises:

~~a step of setting recording powers of a top pulse and/or a last pulse of a laser beam used for forming at least one recording mark contained within said group to a second recording power lower than a first recording power which is a recording power of an intermediate pulse(s) between the top pulse and the last pulse; and~~

~~setting a pulse width of a cooling pulse of the laser beam used for forming at least one recording mark contained within said group to be wider than the pulse width of each of the top pulse, intermediate pulse(s) and last pulse, thereby recording information in the optical recording medium.~~

2. (Original) A method of recording information to an optical recording medium in accordance with Claim 1, wherein the recording powers of the top pulse and the last pulse are set at the same level.

3. (Original) A method of recording information to an optical recording medium in accordance with Claim 1, wherein the first recording power $Pw1$ and the second recording power $Pw2$ are set so that $Pw2/Pw1$ is smaller than 0.9.

4. (Original) A method of recording information to an optical recording medium in accordance with Claim 2, wherein the first recording power P_{w1} and the second recording power P_{w2} are set so that P_{w2}/P_{w1} is smaller than 0.9.

5-8. (Canceled)

9. (Currently Amended) A method of recording information to an optical recording medium in accordance with Claim 18, wherein the pulse width of the cooling pulse is set to be equal to or wider than 1.0 T.

10. (Currently Amended) A method of recording information to an optical recording medium in accordance with Claim 19, wherein a length of a shortest signal between neighboring recording marks is equal to or shorter than 30 ns.

11. (Original) A method of recording information to an optical recording medium in accordance with Claim 10, wherein the length of the shortest signal between neighboring recording marks is equal to or shorter than 20 ns.

12. (Currently Amended) An optical recording medium comprising at least a recording layer to which information is recorded by projecting a pulse-modulated laser beam thereonto and forming thereon a plurality of recording marks selected from a group consisting of several types of recording marks each with different lengths, wherein: the optical recording medium comprises information required to set recording powers of a top pulse and/or a last pulse of a laser beam used for forming at least one recording mark contained within said group to a second recording power lower than a first recording power which is a recording power of an intermediate pulse(s) between the top pulse and the last pulse and record the information therein and set a pulse width of a cooling pulse of the laser beam used for forming at least one recording mark contained within said group to be wider than the pulse width of each of the top pulse, intermediate pulse(s) and last pulse.

13. (Original) An optical recording medium in accordance with Claim 12, which further comprises information required to set the recording powers of the top pulse and the last pulse at the same level and record the information therein.

14. (Original) An optical recording medium in accordance with Claim 12, which further comprises information required to set the first recording power P_{w1} and the second recording power P_{w2} so that P_{w2}/P_{w1} is smaller than 0.9.

15. (Original) An optical recording medium in accordance with Claim 13, which further comprises information required to set the first recording power P_{w1} and the second recording power P_{w2} so that P_{w2}/P_{w1} is smaller than 0.9.

16. (Currently Amended) An information recording and reproducing apparatus that records information by projecting a pulse-modulated laser beam onto an optical recording medium and forming on the optical recording medium a plurality of recording marks selected from a group consisting of several types of recording marks each with different lengths, thereby recording information in the optical recording medium wherein: the information recording and reproducing apparatus comprises at least optical means for projecting the laser beam onto the optical recording medium and laser drive means for supplying a laser drive signal for controlling the laser beam, the laser drive means being adapted to supply a laser drive signal to set recording powers of a top pulse and/or a last pulse of a laser beam used for forming at least one recording mark contained within said group to a second recording power lower than a first recording power which is a recording power of an intermediate pulse(s) between the top pulse and the last pulse and a laser drive signal to set a pulse width of a cooling pulse of the laser beam used for forming at least one recording mark contained within said group to be wider than the pulse width of each of the top pulse, intermediate pulse(s) and last pulse.

17. (Original) An information recording and reproducing apparatus in accordance with Claim 16, wherein the recording powers of the top pulse and the last pulse are set at the same level.

18. (Original) An information recording and reproducing apparatus in accordance with Claim 16, wherein the first recording power P_{w1} and the second recording power P_{w2} are set so that P_{w2}/P_{w1} is smaller than 0.9.

19. (Currently Amended) An information recording and reproducing apparatus in accordance with Claim 17, wherein the first recording power P_{w1} and the second recording power P_{w2} are set so that P_{w2}/P_{w1} is smaller than 0.9.

to an optical recording medium which information is recorded by projecting a pulse-modulated laser beam onto the optical recording medium and forming on the optical recording medium a plurality of recording marks selected from a group consisting of several types of recording marks each with different lengths, wherein[:] the method of recording information to an optical recording medium comprises:

20. (New) A method of setting the forming of recording marks in which an individual mark is set to be formed by the method comprising:

setting a recording power of an intermediate pulse to a first power level;

setting recording powers of a top pulse and a last pulse of a laser beam used for forming at least one recording mark to a second recording power lower than the first recording power which is a recording power of the intermediate pulse;

setting a bottom most power level for the laser pulse while the mark is being recorded, the bottom power being lower than the first power and the second power and also being lower than a median power and being positioned between the top pulse and an intermediate pulse and between any intermediate pulse and the last pulse;

setting a pulse width of a cooling pulse of the laser beam used for forming at least one recording mark contained within said group to be wider than the pulse width of any one of

the top pulse, an intermediate pulse and last pulse and having the same power level as the bottom most power level.

21. (New) The method according to claim 20 further including:

setting the pulse width of the cooling pulse to be greater than or equal to than 3 times wider than any intermediate pulse of the pulse train for forming the recording mark.